CANADA - BRITISH COLUMBIA

AGREEMENT RESPECTING

Floodplain Mapping

ANNUAL REPORT 1989 - 1990

Environment Canada / Environnement Canada

BC Environment

92-01400/

British Columbia Cataloguing in Publication Data

Canada - British Columbia Agreement Respecting Floodplain Mapping
Annual Report - 1989 - 1990

Annual.
Cover title.
Co-published by BC Ministry of Environment.
Report year ends Mar. 31.
ISSN 1180-5684 = Annual report - Canada - British Columbia Agreement Respecting Floodplain Mapping.

1. Canada - British Columbia Agreement Respecting Floodplain Mapping
2. Floodplains - British Columbia - Maps. I. Canada. Environment Canada.
II . British Columbia. Ministry of Environment. III . Title.

GB568.15.C32 551.48'9'09711
ENV112149.791

STEERING COMMITTEE

CANADA - BRITISH COLUMBIA AGREEMENT

RESPECTING FLOODPLAIN MAPPING

Canada

D.W. Farley
C.H. Pharo

British Columbia

E.W.D. Bonham
G.T. Sawayama

Dear Mr. Minister:

The Steering Committee responsible for the administration of the Agreement Respecting Floodplain Mapping in the Province of British Columbia herewith submits its 2nd Annual Report for the year ending March 31, 1990 in accordance with the requirements of the Agreement signed December 3, 1987.

Respectfully submitted,

E.W.D. Bonham, Chairman
Steering Committee

TABLE OF CONTENTS

LETTER OF TRANSMITTAL

1.0 **INTRODUCTION** 3

2.0 **ORGANIZATION** 4

3.0 **STEERING COMMITTEE MEMBERSHIP** 5

4.0 **1989/90 PROGRAM**

- 4.1 Highlights 6
- 4.2 Expenditures 7
- 4.3 Public Information 8
- 4.4 Engineering Studies 9
- 4.5 River Surveys 10
- 4.6 Base Mapping 10

5.0 **DESIGNATIONS** 11

6.0 **1990/91 PROGRAM APPROVAL** 12

Figure 1 - Organization - Floodplain Mapping Agreement 13

Appendix 1 - Expenditure Summary 1989/90 14

Appendix 2 - Designated Floodplain Areas 15

Appendix 3 - Schedule A.2 17

Appendix 4 - Schedule A.3 18

1.0 INTRODUCTION

The 10-year Canada-British Columbia Agreement Respecting Floodplain Mapping was signed on December 3, 1987 to provide information on the extent of floodplain areas within British Columbia. The Agreement provides for the determination of the location and extent of selected floodplain areas, for the designation or interim designation by the Minister of the Environment for Canada and the Minister of Environment for British Columbia of the mapped floodplains. The Agreement also provides for the preparation and distribution of information about the floodplains to zoning authorities, government agencies, and to the general public.

This report summarizes the progress made during the second year of the Agreement. Up to March 31, 1990, expenditures under the Program amounted to $2,078,854. A total of fifty areas have been designated or interim designated by the Ministers under the terms of the Agreement. A significant portion of the technical work under the Agreement was assigned to the private sector under contract.

2.0 ORGANIZATION

Under the terms of the Agreement, a four-member Steering Committee was established to be responsible for its general administration and to provide overall co-ordination and direction of the floodplain mapping program. A Technical Co-ordinator and Secretary to the Steering Committee was also appointed. The Steering Committee reports through its Chairman to the Minister of Environment for British Columbia and to the Minister of the Environment for Canada.

A majority of the base mapping production is assigned to the private sector under contract to the Surveys and Resource Mapping Branch, British Columbia Ministry of Crown Lands. Engineering study contracts are managed by the Water Management Branch, B.C. Environment. The Steering Committee assigned co-ordination between the Parties of the public information program under the Agreement to selected staff members.

Figure 1 is an illustration of the organization under the Agreement.

3.0 STEERING COMMITTEE MEMBERSHIP

The Steering Committee consists of two federal and two provincial members. The Steering Committee, which met on March 15, 1990, consists of the following:

CANADA

Dr. C.H. Pharo, Chief
Water Planning and Management Branch
Inland Waters
Pacific and Yukon Region
Environment Canada
Vancouver, B.C.

Mr. D.W. Farley, Chief
Water Management Systems Division
Water Planning and Management Branch
Inland Waters Directorate
Environment Canada
Ottawa, Ont.

BRITISH COLUMBIA

Mr. E.W.D. Bonham (Chairman)
Assistant Director, Engineering
Water Management Branch
B.C. Environment
Victoria, B.C.

Mr. G.T. Sawayama, Director
Surveys and Resource Mapping Branch
Ministry of Crown Lands
Victoria, B.C.

Mr. R.W. Nichols, P. Eng., Water Management Branch, B.C. Environment was appointed by the Ministers as Technical Co-ordinator and Secretary to the Steering Committee.

4.1 HIGHLIGHTS

A total of six projects were designated, or interim designated, by the Ministers during 1989/90.

Engineering studies were completed or underway in eight project areas.

River surveys were completed for five project areas.

Base mapping activities involved eight project areas.

A Key Plan of each of the designated, or interim designated, floodplain areas was completed and the preparation of a videocassette for public information purposes was commenced.

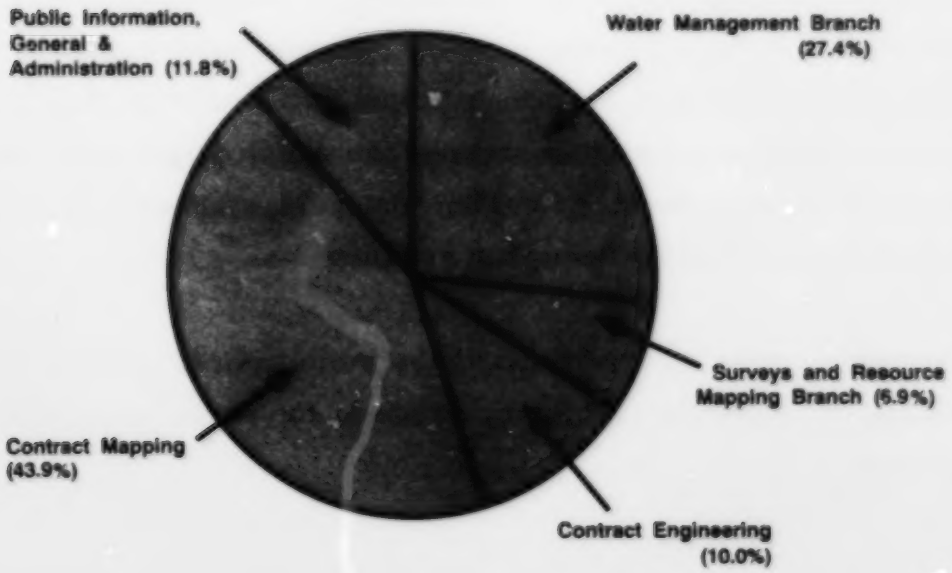
4.2 EXPENDITURES

Total expenditures for the 1989/90 fiscal year amounted to $1,051,642. Appendix 1 shows the 1989/90 expenditures by projects. The Federal share of this expenditure was $493,060 in accordance with the Agreement.

Documentation and records of the expenditures have been examined by auditors in accordance with requirements of the Agreement.

A total of eight base mapping contracts were undertaken by private sector firms. Engineering study contracts were undertaken by consultants for a total of three projects.

The 1989/90 expenditures under the program were distributed as follows:


Public Information, General & Administration (11.8%)
Water Management Branch (27.4%)
Surveys and Resource Mapping Branch (6.9%)
Contract Mapping (43.9%)
Contract Engineering (10.0%)

4.3 PUBLIC INFORMATION

Public information has been ongoing since 1974 with respect to the Provincial Floodplain Mapping Program. The federal and provincial ministries, agencies, and municipalities affected by the 1989/90 designations or interim designations were so advised.

The generic brochure produced in 1988/89 was distributed to users of the floodplain mapping drawings. A total of 122 requests were received by Maps B.C. in 1989/90 involving the issuing of 1,420 floodplain mapping sheets. Numerous over the counter inquiries related to floodplain mapping are processed by federal, provincial and municipal personnel involved in the flood damage reduction program in locations throughout the province.

A key plan of each project designated, or interim designated, under the Agreement has been produced. The plan provides background information on the Canada-British Columbia Floodplain Mapping Agreement and lists information sources for program details and for the ordering of mapping sheets. A Key Plan catalogue is to be assembled and distributed to users of the floodplain mapping.

Substantial progress was made towards the production of a videocassette outlining the Floodplain Mapping Program for public information purposes.

4.4 ENGINEERING STUDIES

The three projects listed below were completed in 1989/90 and recommended by the Steering Committee to the Ministers for designation or interim designation:

PROJECT	NO. OF DRAWINGS
A.2.16 Lillooet River	11
A.3.29 Lakelse River and Lake	6
A.3.48 Williams Lake	2

Three other projects undertaken in 1989/90 were also completed. The design brief and drawings for these projects were under final review by March 30, 1990. The projects are listed as follows:

PROJECT	NO. OF DRAWINGS
A.3.49 Seymour River/Shuswap Lake	2
A.3.51 Tsolum River	7
A.3.54 Chemainus River	3

Two additional projects were approximately 80 percent complete by the end of the fiscal year.

4.5 RIVER SURVEYS

River survey data obtained by B.C. Environment staff for five projects undertaken in 1989/90 are listed as follows:

PROJECT	
A.2.1	Fraser and Quesnel Rivers at Quesnel (review and future extension)
A.3.7	Stuart River and Lake
A.1.8/A.3.12	Cowichan River (review and future extension)
A.3.39	Salmo River (high water data)
A.3.83	Kootenay River

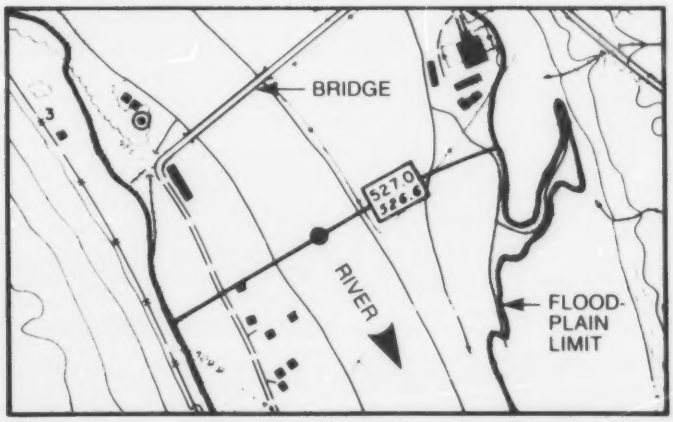
4.6 BASE MAPPING

Activities with respect to base mapping produced during 1989/90 involved eight projects as follows:

PROJECT		ACTIVITY
A.2.3	Kettle & Granby Rivers	Mapping
A.2.6	Keremeos/Princeton	Survey Control and Photo
A.3.12	Cowichan River	Survey Control and Photo
A.3.39	Salmo River	Mapping
A.3.46	Bear River	Survey Control and Photo
A.3.47	Nicomekl-Serpentine River	Mapping
A.3.69	Naver Creek	Photo
A.3.84	Duncan/Lardeau	Survey Control and Photo

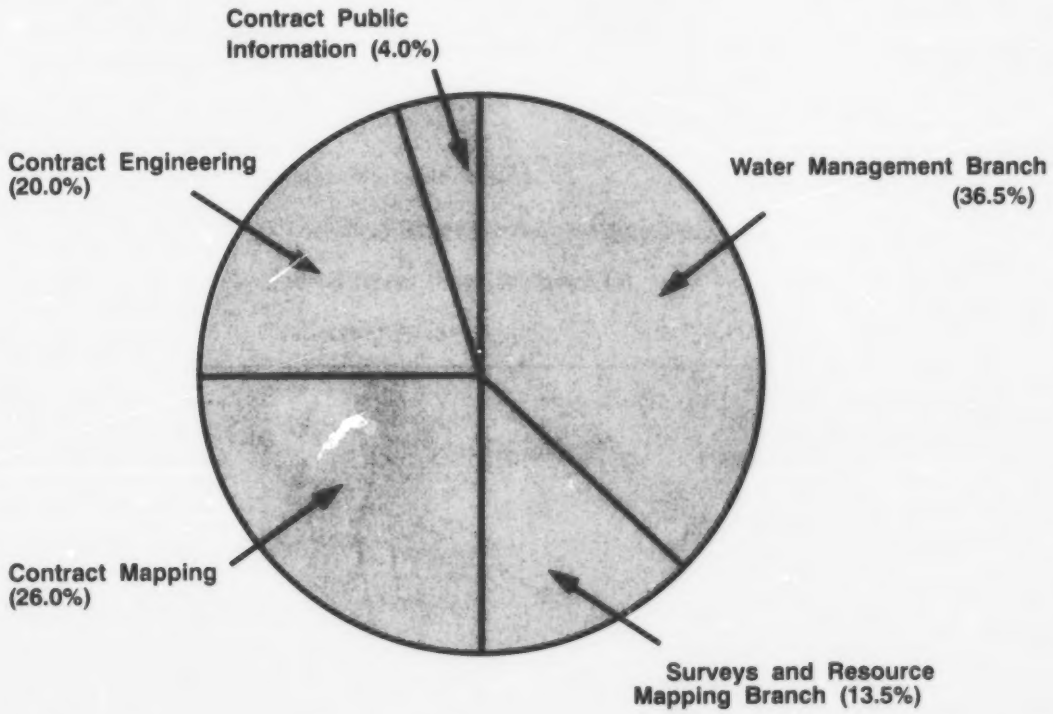
5.0 DESIGNATIONS

Appendix 2 is a list of the fifty floodplain areas designated, or interim designated, by the Ministers by March 31, 1990. Six of these areas, involving fifty-one mapping sheets, were designated (or interim designated) during 1989/90 as indicated in Appendix 2.



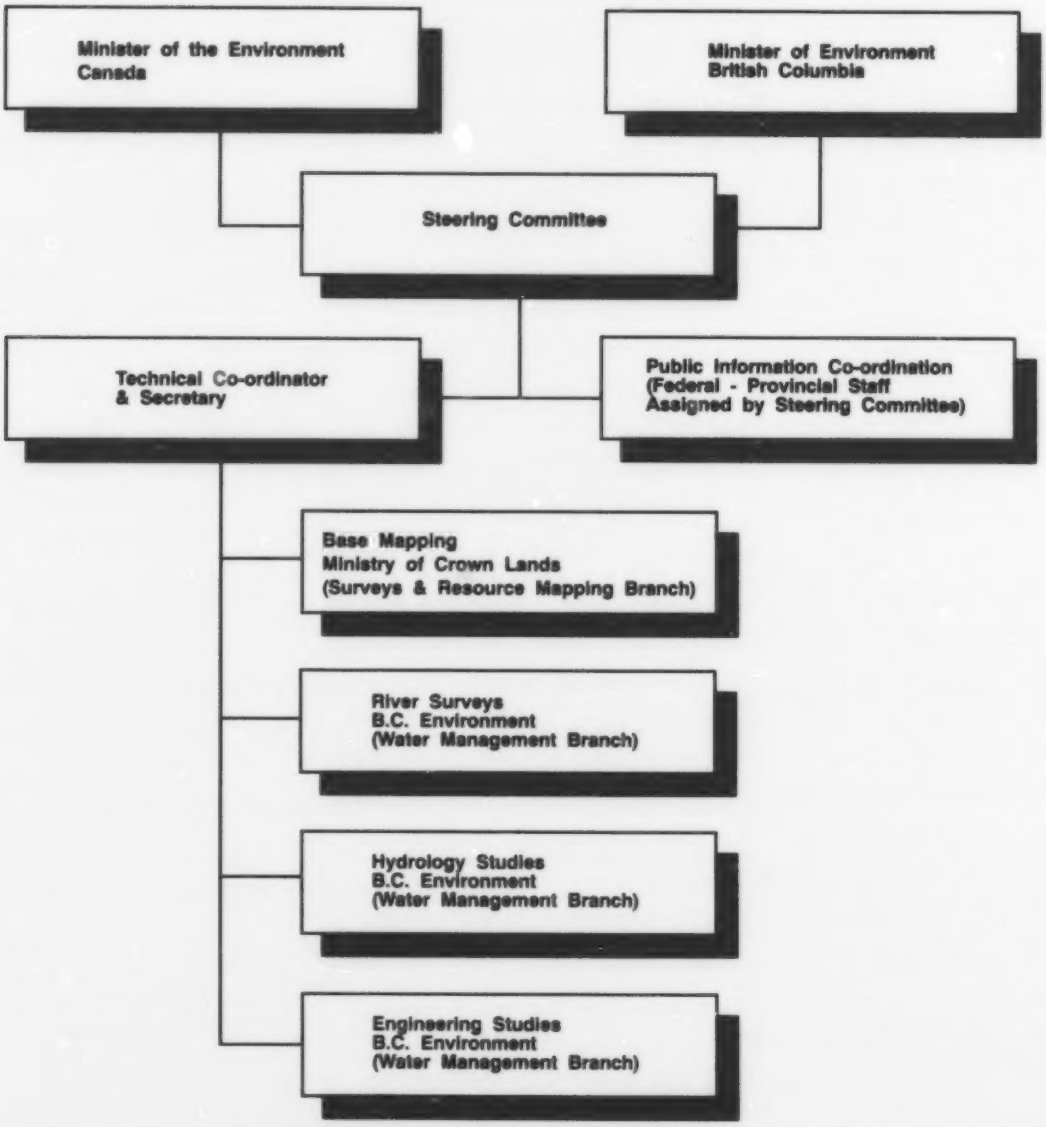
6.0 1990/91 PROGRAM APPROVAL

The Steering Committee approved a program of work and budget for the 1990/91 fiscal year as summarized below: **Total $1 million**


Contract Public Information (4.0%)
Contract Engineering (20.0%)
Water Management Branch (36.5%)
Contract Mapping (26.0%)
Surveys and Resource Mapping Branch (13.5%)

Appendix 3 and 4 list the areas identified in Schedule A.2 and A.3 of the Agreement along with the activities completed and proposed for the 1990/91 Program.

FIGURE 1
ORGANIZATION
CANADA - BRITISH COLUMBIA
FLOODPLAIN MAPPING AGREEMENT



APPENDIX 1

EXPENDITURE SUMMARY 1989 - 1990

PROJECT		TOTAL EXPENDITURE ($)
A.1.6	Courtenay River	4,238.28
A.1.15	Salmon and White Rivers	5,165.69
A.2.1	Quesnel River	69,940.75
A.2.3	Kettle and Granby Rivers	116,971.00
A.2.6	Similkameen River	43,930.00
A.2.9	Alouette River	13,089.01
A.2.16	Lillooet River	12,446.48
A.3.1	Bella Coola River	123.11
A.3.2	Beaver Creek	718.83
A.3.3	Nicola River	123.11
A.3.5	Slocan River	929.39
A.3.6	Elk River	604.80
A.3.7	Stuart River	38,570.83
A.3.8	Salmon River	6,242.08
A.3.9	Okanagan River	10,024.23
A.3.10	Campbell/Quinsam Rivers	1,690.93
A.3.11	Keogh/Quatse Rivers	5,859.40
A.3.12	Cowichan River	71,004.55
A.3.16	Chilliwack/Vedder Rivers	591.86
A.3.28	Skeena River	447.33
A.3.29	Lakelse Lake	6,573.21
A.3.39	Salmo River	111,027.15
A.3.40	Tahsis River	647.50
A.3.46	Bear River	57,840.00
A.3.47	Nicomekl-Serpentine River	126,735.80
A.3.48	Williams Lake	5,815.05
A.3.49	Seymour River/Shuswap L.	22,584.41
A.3.50	Whistler Area	10,961.11
A.3.51	Tsolum River	59,228.89
A.3.54	Chemainus River	22,268.81
A.3.55	Sooke River	37.70
A.3.56	Little Qualicum River	1,375.00
A.3.62	Christina Lake	2,974.09
A.3.63	Shuswap River	459.60
A.3.69	Naver/Hixon Creeks	24,841.07
A.3.82	Kootenay River	20,497.51
A.3.84	Duncan/Lardeau Rivers	50,874.93
Total Project		**927,453.49**
General and Administration		**124,188.50**
Total Expenditures		**$ 1,051,641.99**

APPENDIX 2 (PAGE 1 OF 2)

DESIGNATED FLOODPLAIN AREAS IN THE PROVINCE OF BRITISH COLUMBIA

DESIGNATED AREA (December 3, 1987) (From Schedule A.1 of the Agreement)		Issue Date
A.1.1	Chilliwack: Vedder River to Slesse Creek	81-02
A.1.2	Columbia River: Columbia-Windermere Lakes	80-10
A.1.3	Columbia River at Golden	79-02
A.1.4	Columbia River: Windermere Lake-Radium	82-04
A.1.5	Coquitlam River: Coquitlam Lake-Fraser River	76-10
A.1.6	Courtenay River	79-07
A.1.7	Cowichan Lake	84-06
A.1.8	Cowichan & Koksilah Rivers at Duncan	81-05
A.1.9	Eagle River	79-01
A.1.10	Elk River at Fernie	79-05
A.1.11	Elk River at Sparwood	80-03
A.1.12	Kitimat River	82-03
A.1.13	Kootenay River: Kootenay Lake-U.S. Border	81-08
A.1.14	North Thompson River: Kamloops-Vavenby	82-12
A.1.15	Salmon & White Rivers	80-12
A.1.16	Shuswap River: Mara Lake to Mabel Lake	80-06
A.1.17	Skeena River: Lakelse-Terrace-Usk	82-10
A.1.18	South Thompson River: Kamloops-Chase	76-06
A.1.19	Thompson River: Kamloops Area	76-06
A.1.20	Tulameen River: Coalmont-Tulameen	81-04
A.1.21	Okanagan Lake: Westbank to Peachland	82-09
A.1.22	Columbia River at Revelstoke	83-11
A.1.23	Fraser and Nechako Rivers: Prince George	83-09
A.1.24	Kaslo River at Kaslo	84-03
A.1.25	Squamish River	83-10
A.1.26	Goat River	84-09
A.1.27	Mission Creek	84-09
A.1.28	Nanaimo River	84-05
A.1.29	Nechako River at Vanderhoof	84-07
A.1.30	Bulkley and Telkwa Rivers	84-12
A.1.31	Bulkley River at Houston	85-10
A.1.32	Cheakamus River	86-04
A.1.33	Zymoetz (Copper) River	85-06
A.1.34	Englishman River	85-04
A.1.35	Vedder River (Vedder Canal to Vedder Crossing)	85-12
DESIGNATED AREA (September 30, 1988) (From Schedule A.2 of the Agreement)		**Issue Date**
A.2.1	Fraser and Quesnel Rivers at Quesnel*	87-05
A.2.5	Shawnigan Lake*	79-09
A.2.7	Coquihalla River at Hope*	85-06
A.2.8	Oyster River*	84-05
A.2.10	Salmon River near Prince George*	86-01
A.2.11	Peace River*	85-12
A.2.12	Fraser River near Hope*	87-07
A.2.13	Crawford Creek	87-06
A.2.15	Bulkley River: Quick Area*	86-11

(*Interim Designation)

APPENDIX 2 (PAGE 2 OF 2)

DESIGNATED FLOODPLAIN AREAS
IN THE PROVINCE OF BRITISH COLUMBIA

DESIGNATED AREA (September 30, 1989)		Issue Date
A.3.1	Bella Coola River*	89-09
A.3.3	Nicola River - Spences Bridge to Canford*	89-09
	- Canford to Nicola Lake	89-09
A.3.6	Elk River near Elkford*	89-09
DESIGNATED AREA (March 31, 1990)		**Issue Date**
A.3.2	Beaver Creek*	90-03
A.3.5	Slocan River	90-03
A.3.10	Campbell/Quinsam Rivers	90-03

(*Interim Designation)

APPENDIX 3

SCHEDULE A.2

Area to be Remapped	Activity				
	Mapping				
	Air Photo	Field Control	Base Mapping	River Surveys	Engineering Studies
A.2.2 Fitzsimmons Creek (Whistler area)		(See Appendix 4 - A.3.50)			
A.2.3 Kettle and Granby (Grand Forks)	1988/89	1988/89	1989/90	(1990/91)	-
A.2.4 Nicola and Coldwater (Merritt)		(See Appendix 4 - A.3.3)			
A.2.6 Similkameen River (U.S. Border-Princeton)	1988/89	1989/90	(1990/91)	-	-
A.2.9 Alouette River	C	C	1988/89	C	(1990/91)
A.2.14 Bella Coola		(See Appendix 4 - A.3.1)			
A.2.16 Lillooet River	C	C	C	C	1989/90

C = Completed prior to the Agreement

APPENDIX 4 (PAGE 1 OF 2)

SCHEDULE A.3

Area	Activity				
	Mapping				
	Air Photo	Field Control	Base Mapping	River Surveys	Engineering Studies
1. Bella Coola River	C	C	C	C	1988/89 -D
2. Beaver Creek near Fruitvale	C	C	C	C	1988/89 -D
3. Nicola River	C	C	C	C	1988/ 89-D
4. Coldstream Creek near Vernon	-	-	-	-	-
5. Slocan River	C	C	C	C	1988/ 89-D
6. Elk River (ext. of existing mapping)	C	C	C	C	1988/ 89-D
7. Stuart River	C	C	C	1989/90	(1990/91)
8. Salmon River near Westwold	C	C	C	C	(1990/91)
9. Okanagan River	C	C	C	C	(1990/91)
10. Campbell and Quinsam Rivers - Van. Island	C	C	C	C	1988/89-D
11. Keogh and Quatse Rivers - Van. Island	C	C	C	1988/89	-
12. Cowichan River (ext. of existing mapping)	1989/90	1989/90	(1990/91)	-	-
13. Nechako River (ext. of existing mapping)	C	C	C	-	-
14. Kelowna Creek	-	-	-	-	-
15. Fortune and Deep Creeks near Vernon	-	-	-	-	-
16. Chilliwack River (ext. of existing mapping)	-	-	-	-	-
17. Duhamel Creek	C	C	1988/89	-	-
18. Shuttleworth Creek near Penticton	-	-	-	-	-
19. Silverton Creek - Slocan Lake	C	C	1988/89	-	-
20. Carpenter Creek - Slocan Lake	-	-	-	-	-
21. Zeballos River - Van. Island	C	C	1988/89	(1990/91)	-
22. Bridge Creek	-	-	-	-	-
23. Nakusp Creek	-	-	-	-	-
24. Bessette Creek	-	-	-	-	-
25. Gold River - Van. Island	-	-	-	-	-
26. Chilanko River - Cariboo	-	-	-	-	-
27. Dawson Creek	-	-	-	-	-
28. Skeena River - Usk to Hazelton	C	C	C	-	-
29. Lakelse Lake near Kitimat	C	C	C	1988/89	1989/90
30. Thompson River at Ashcroft	-	-	-	-	-
31. Bonaparte River at Cache Creek	-	-	-	-	-
32. Centurion Creek at Chetwynd	-	-	-	-	-
33. Clinton Creek at Clinton	-	-	-	-	-
34. Harrison Lake	-	-	-	-	-
35. Fraser River at Lillooet	-	-	-	-	-
36. Fraser River at Lytton	-	-	-	-	-
37. Fraser River at McBride	-	-	-	-	-
38. Kettle River at Midway	-	-	-	-	-
39. Salmo River	C	1988/89	1989/90	1988/89	(1990/91)
40. Tahsis River - Van. Island	C	C	1988/89	(1990/91)	-
41. Swift Creek at Valemont	-	-	-	-	-
42. Boundary Creek at Greenwood	-	-	-	-	-
43. Nicomekl River at Langley	-	-	-	-	-

C = Completed Prior to the Agreement
D = Designated or Interim Designated

APPENDIX 4 (PAGE 2 OF 2)

SCHEDULE A.3

Area	Activity				
	Mapping			River Surveys	Engineering Studies
	Air Photo	Field Control	Base Mapping		
44. Mark Creek at Kimberley	C	C	C	-	-
45. Lynn Creek, Capilano River, Seymour River	(1990/91)	(1990/91)	-	-	-
46. Bear River at Stewart	1989/90	1989/90	(1990/91)	(1990/91)	-
47. Serpentine-Nicomekl Rivers	1988/89	1988/89	1989/90	(1990/91)	-
48. San Jose River at Williams Lake	C	C	C	C	1989/90
49. Seymour River at Seymour Arm	C	C	C	C	1989/90
50. Whistler Area	C	C	C	1988/89	(1990/91)
51. Tsolum River - Van. Island	C	C	1988/89	1988/89	1989/90
52. Vernon Creek	-	-	-	-	-
53. Okanagan Lake (ext. of existing mapping)	-	-	-	-	-
54. Chemainus River	C	C	C	C	1989/90
55. Sooke River	C	C	C	-	-
56. Little Qualicum River	(1990/91)	(1990/91)	-	-	-
57. French Creek	-	-	-	-	-
58. Somass River	(1990/91)	-	-	-	-
59. Kanaka, Wilson and Chapman Creeks	C	C	C	-	-
60. Hatzic Lake	C	C	C	C	-
61. Stawamus River	C	C	C	C	-
62. Christina Lake	C	C	C	N/A	(1990/91)
63. Shuswap River (Mara to Sugar Lake)	(1990/91)	-	-	-	-
64. Heffley Creek	-	-	-	-	-
65. Barriere River	-	-	-	-	-
66. North Thompson River (ext. to Vavenby)	-	-	-	C	-
67. Chilako River (near Prince George)	(1990/91)	(1990/91)	-	-	-
68. Kitsumkalum River (near Terrace)	-	-	-	-	-
69. Naver Creek (near Hixon)	1989/90	(1990/91)	-	-	-
70. Silverdale Creek	-	-	-	-	-
71. Fraser River	-	-	-	-	-
72. Nechako River	C	-	-	-	-
73. Endako River	-	-	-	-	-
74. Willow River	-	-	-	-	-
75. Crooked River	-	-	-	-	-
76. Bulkley River (Quick to Houston)	-	-	-	-	-
77. Pine River	-	-	-	-	-
78. Muskwa and Prophet Rivers	-	-	-	-	-
79. McLennan River	-	-	-	-	-
80. Halfway River	-	-	-	-	-
81. Columbia River (U.S. border to Trail)	C	-	-	-	-
82. Kootenay River (Columbia R. to Kootenay L.)	-	-	-	-	-
83. Kootenay River (Canal Flats to Ft. Steele)	-	-	-	1989/90	(1990/91)
84. Duncan and Lardeau Rivers	1988/89	1988/89	-	-	-
85. Columbia River (Donald Station to Radium)	-	-	-	-	-
86. Fraser River (Tidewater to Hope)	-	-	-	-	-

C = Completed Prior to the Agreement
D = Designated or Interim Designated